Docket: IRID-0404
Title: CAPTURE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventor: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass

Atty: Michael K. Jones - Telephone: 215 568 3100   Sheet 1 of 16
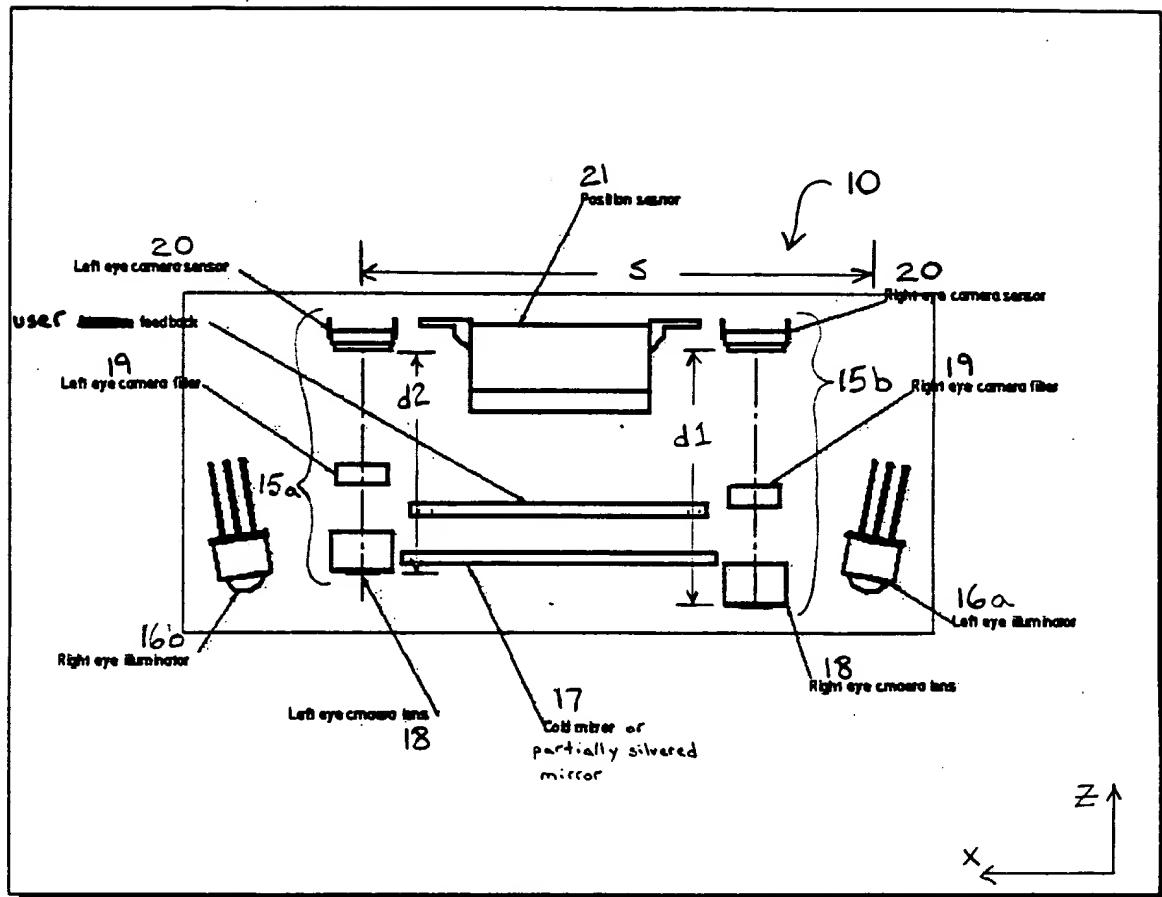
CAPTURE BOX
VOLUME 10.5 in³

Figure 1
(prior art)

CAPTURE BOX
VOLUME 60.1 in³

Figure 2

Docket No. ⬤-0404
Title: IRIS ⬤ RE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: M⬤ Braithwaite, Kevin C. Kaighn and Randal W. Glass

Atty: Michael K. Jones - Telephone: 215 568 3100   Sheet 2 of 16

Figure 3

Docket No.: IRID-0404
Title: CAPTURE DEVICE HAVING EXPANDED CAPTURE VOL
Inv: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass

Atty: Michael K. Jones - Telephone: 215 568 3100

Sheet 3 of 16
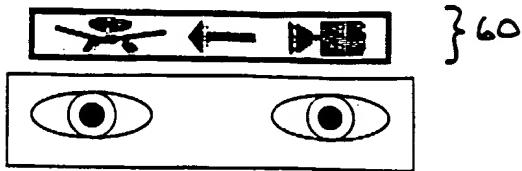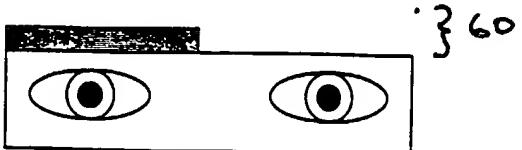
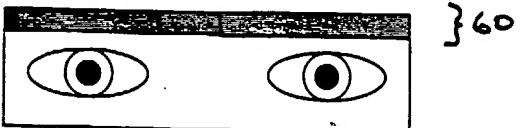Figure 4A

Figure 4B

Figure 4C

Figure 4D

Figure 4E

D[redacted].: IRID-0404
Title: [redacted] CAPTURE DEVICE HAVING EXPANDED CAPTURE VO[redacted]
Inventors: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass
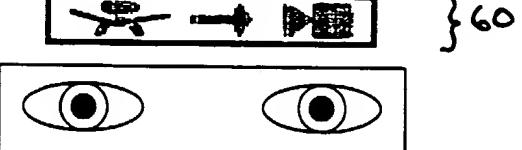
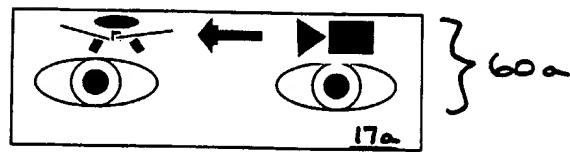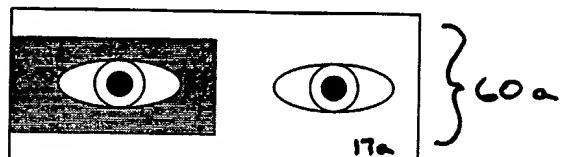Atty: Michael K. Jones - Telephone: 215 568 3100
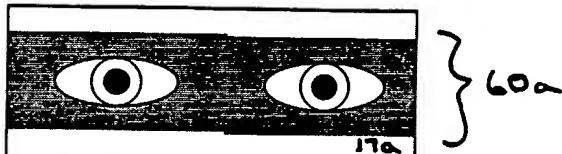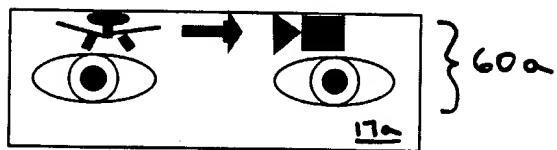
Sheet 4 of 16

Figure 4F

Figure 4G

Figure 4H

Figure 4I

Figure 4J
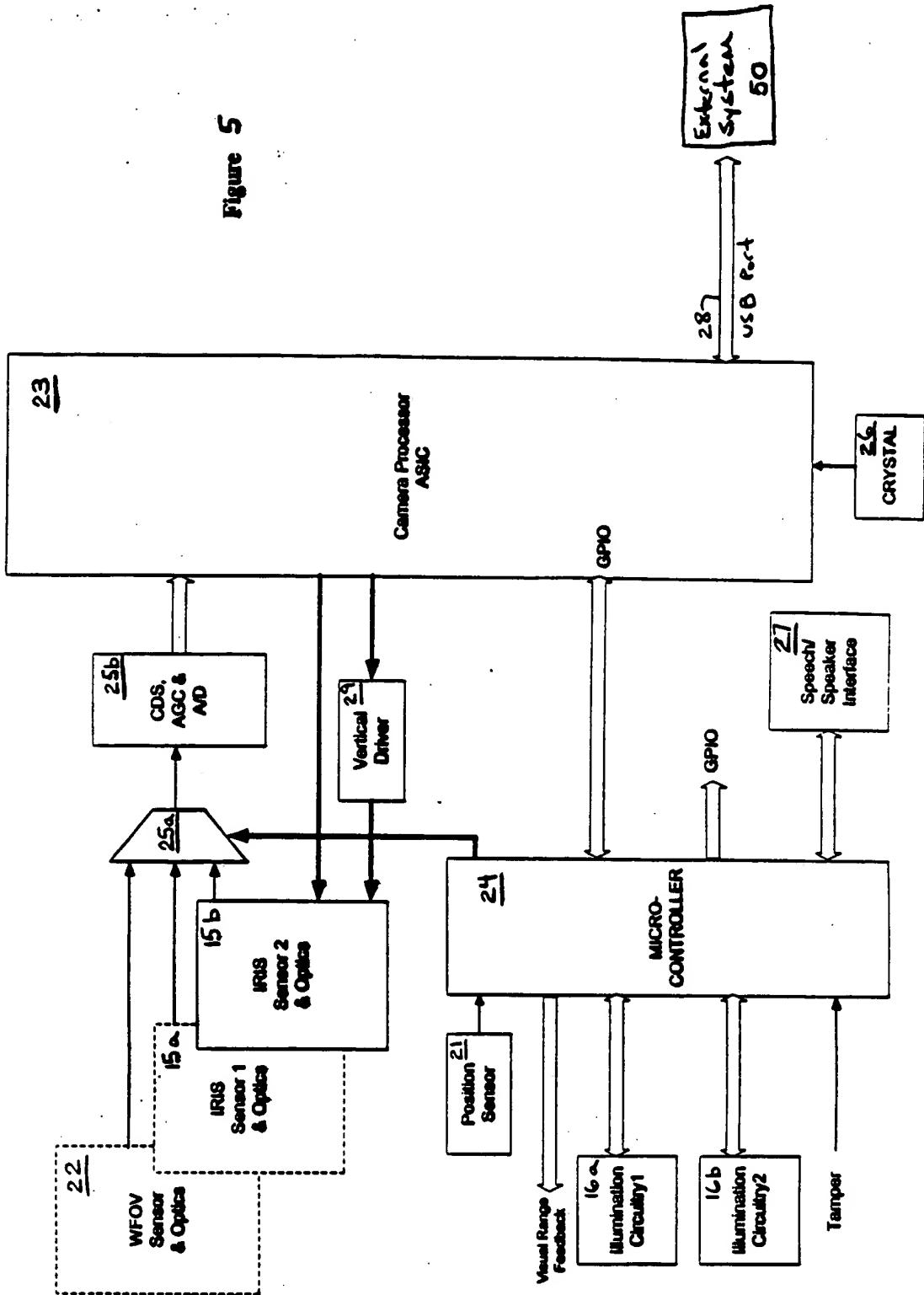
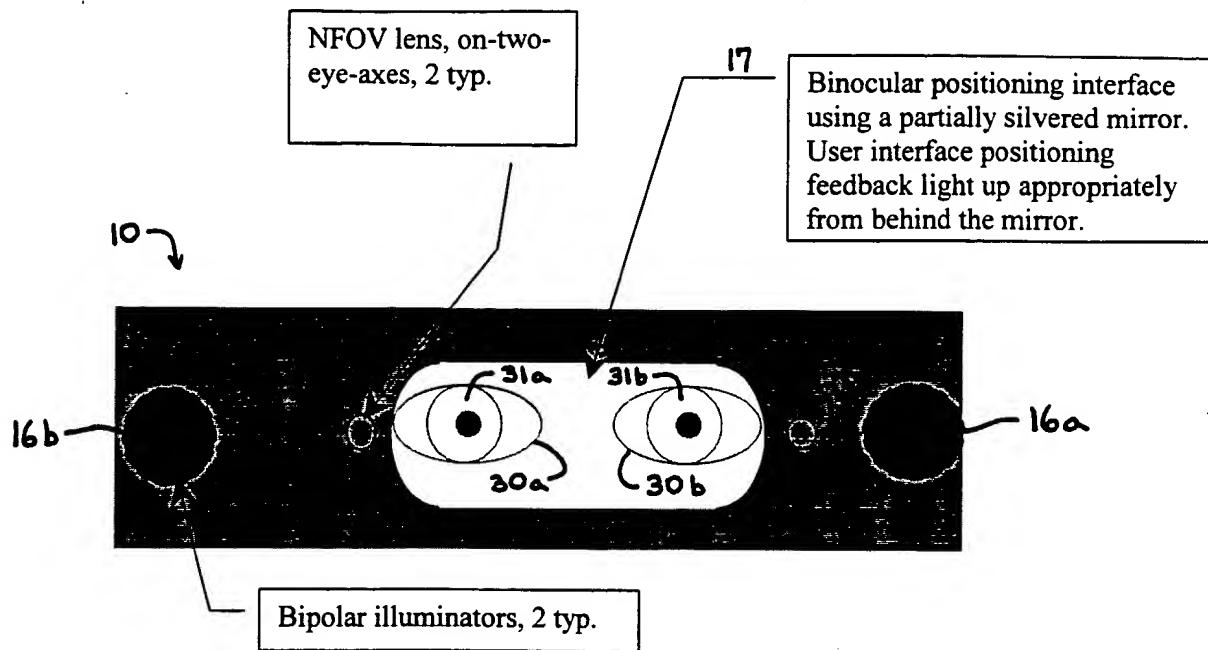Docket No.: IRID-0404
IRIS CAPTURE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass

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Figure 5

Docket No.: IRID-0404
Title: IRIS ⬤PTURE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventor⬤ ⬤el Braithwaite, Kevin C. Kaighn and Randal W. Glass

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NFOV lens, on-two-eye-axes, 2 typ.

17

Binocular positioning interface using a partially silvered mirror. User interface positioning feedback light up appropriately from behind the mirror.

10

16b   31a   31b

16a

30a   30b

Bipolar illuminators, 2 typ.

Figure 6A

WFOV lens for color video conferencing

22

10

17

31a   31b

51

16b

30a   30b

52

54

53

Figure 6B

Docket No.: IRID-0404
Title: IRIS CAP̶T̶U̶R̶E DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: Mic̶h̶a̶e̶l̶ ̶S̶m̶ithwaite, Kevin C. Kaighn and Randal W. Glass

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Field of View of
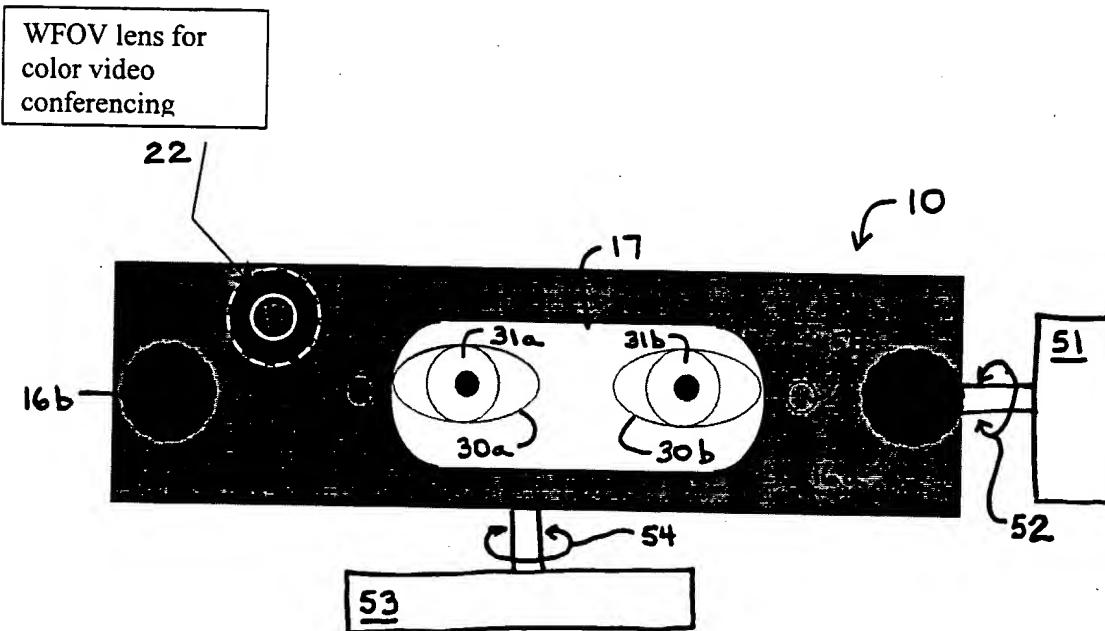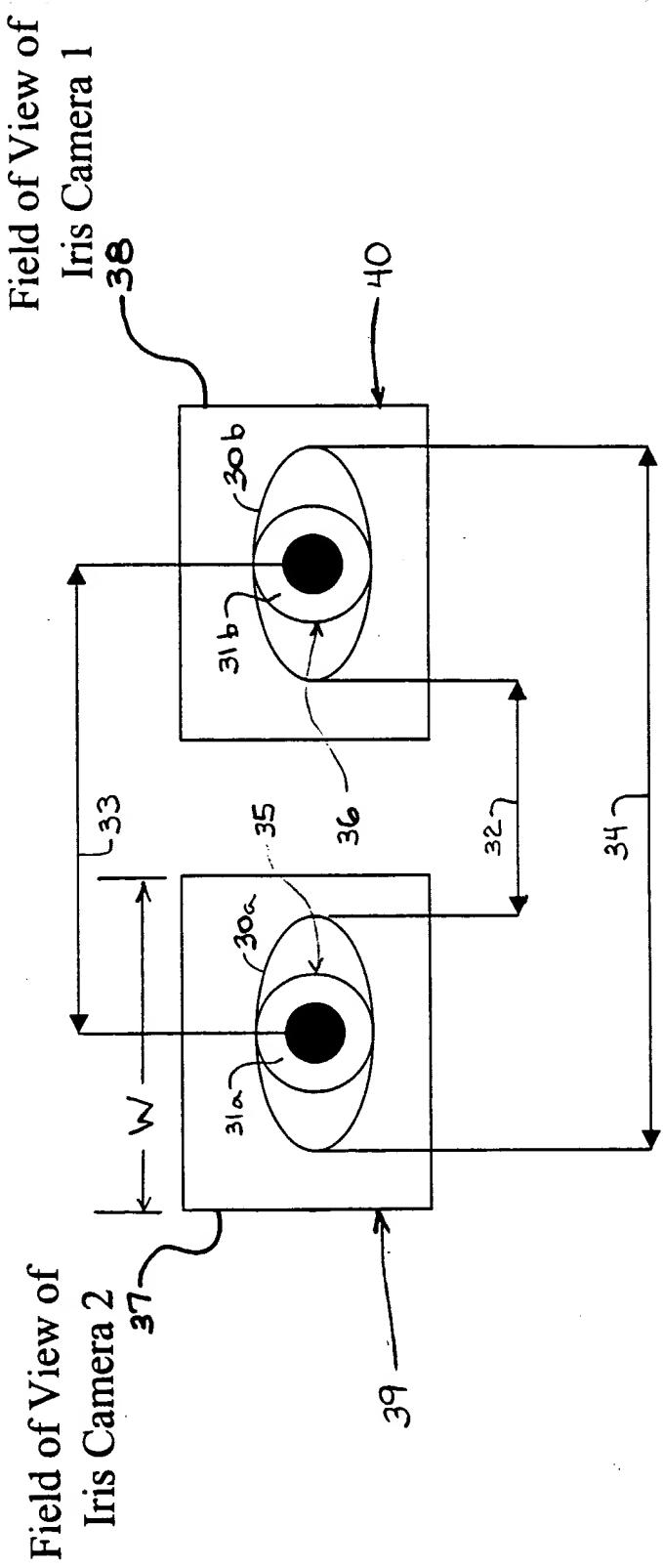Iris Camera 1
38
40

Field of View of
Iris Camera 2
37
39

Figure 7A

Figure 7B

Eye geometry with two capture areas overlaid for each eye

Green positive feedback occurs when the eye is located within the capture zone

Figure 8

Moment of capture for the right eye. The right camera and the left illuminator is active.

Docket No ⬤ 0404
Title: IRIS ⬤ URE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass
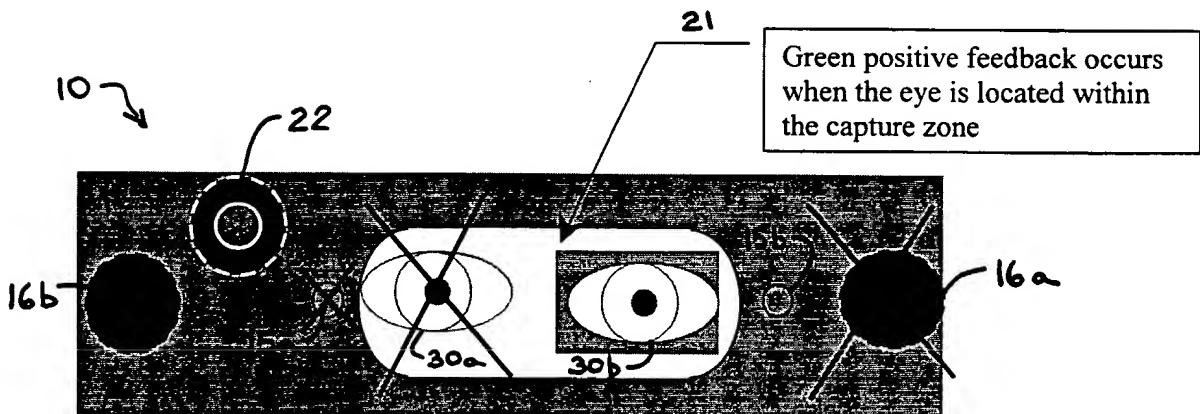
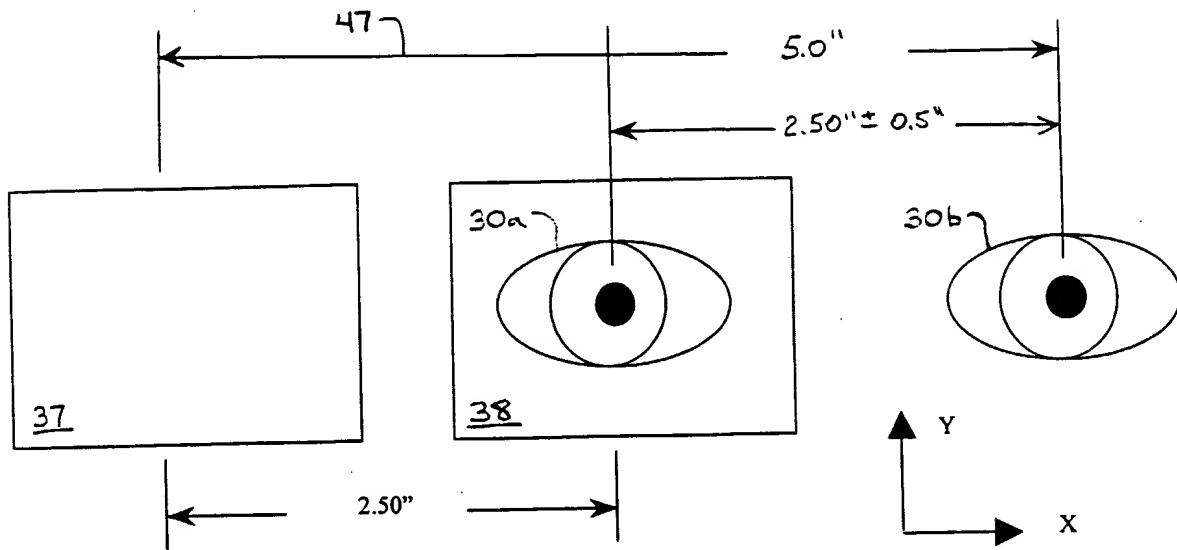Atty: Michael K. Jones - Telephone: 215 568 3100   Sheet 9 of 16

Figure 9
A horizontally offset eye in an image capture situation

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Inventors: chael Braithwaite, Kevin C. Kaighn and Randal W. Glass

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Figure 10A

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Title: IRIS ████ ██RE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: ████ ███ Braithwaite, Kevin C. Kaighn and Randal W. Glass

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Figure 10B

Docket No.: IRID-0404
Title: IRIS CAPTURE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: ael Braithwaite, Kevin C. Kaighn and Randal W. Glass

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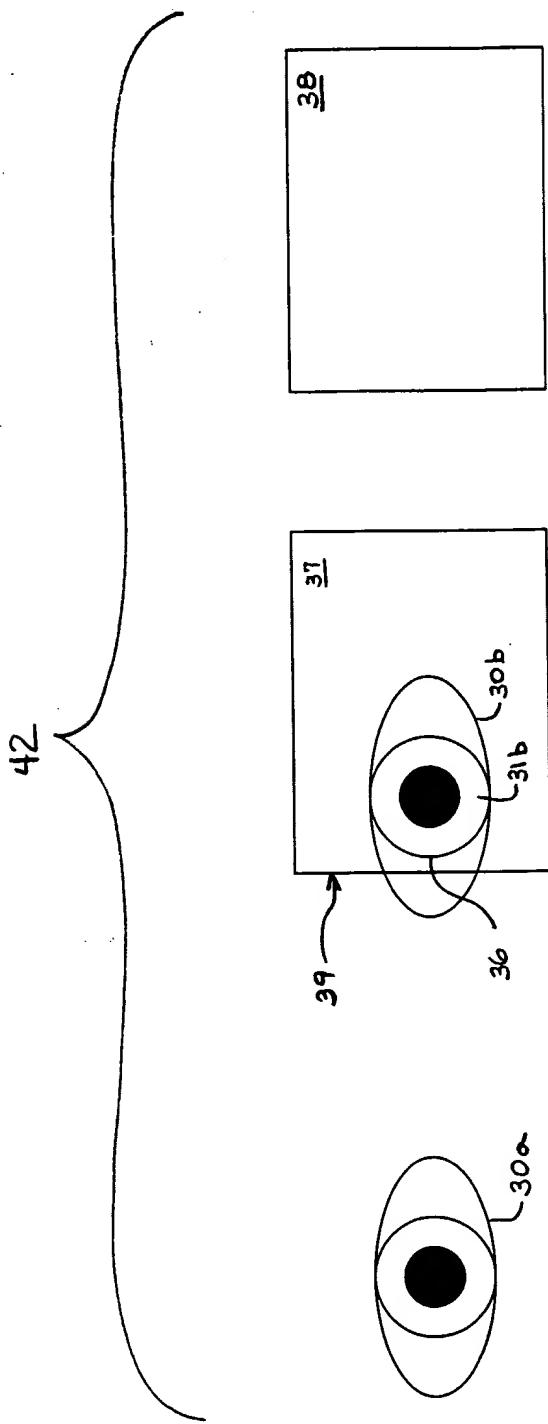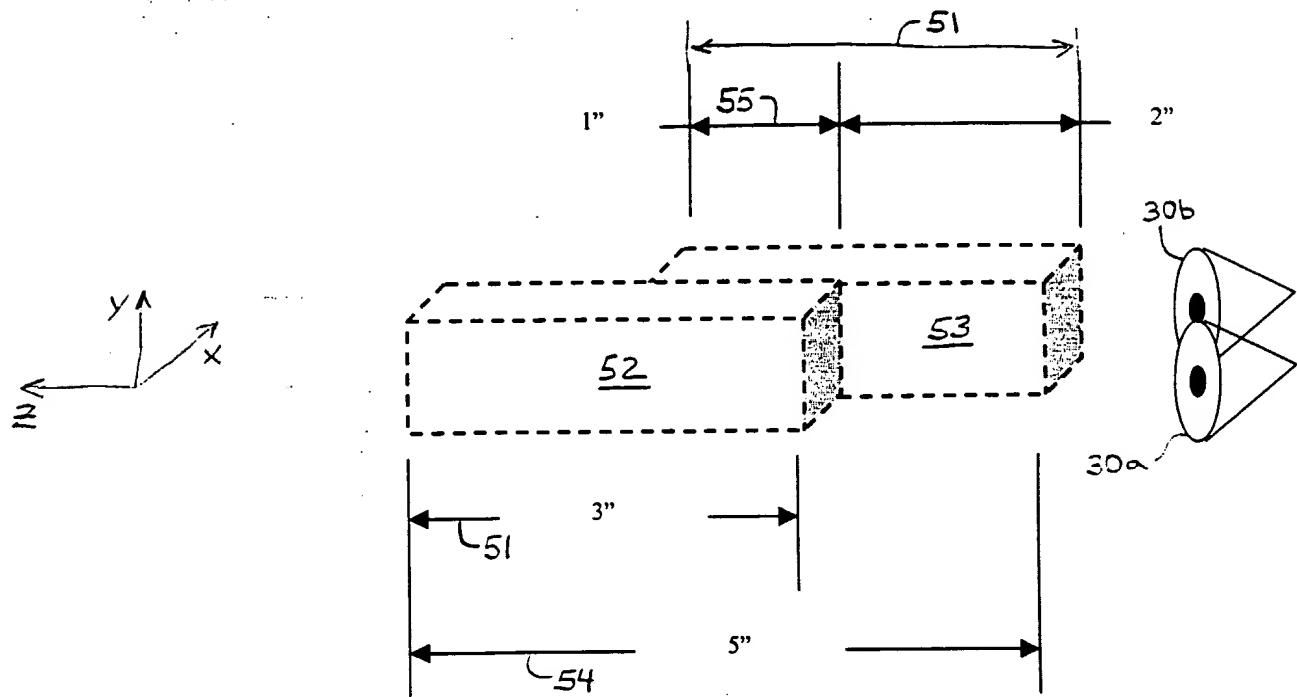
Figure 11

Two non-coincident object distances causing an apparent extension of the Depth of Field
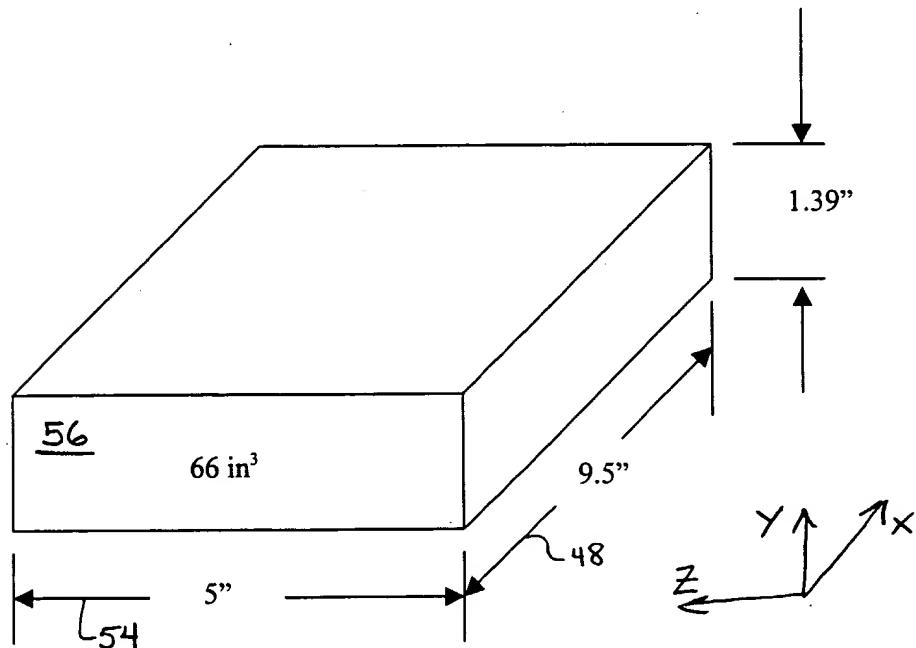
Figure 12

The apparent capture volume created by the capture volumes of Figure 11.

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Title: IRI[...] [...]URE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: [...]el Braithwaite, Kevin C. Kaighn and Randal W. Glass

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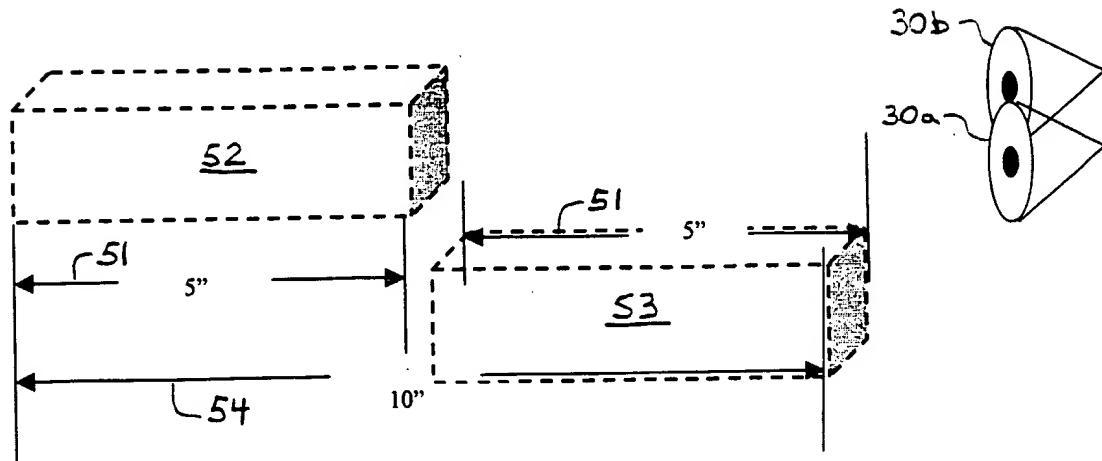
Figure 13

Two non-coincident capture volumes generated by a higher F# from each lens
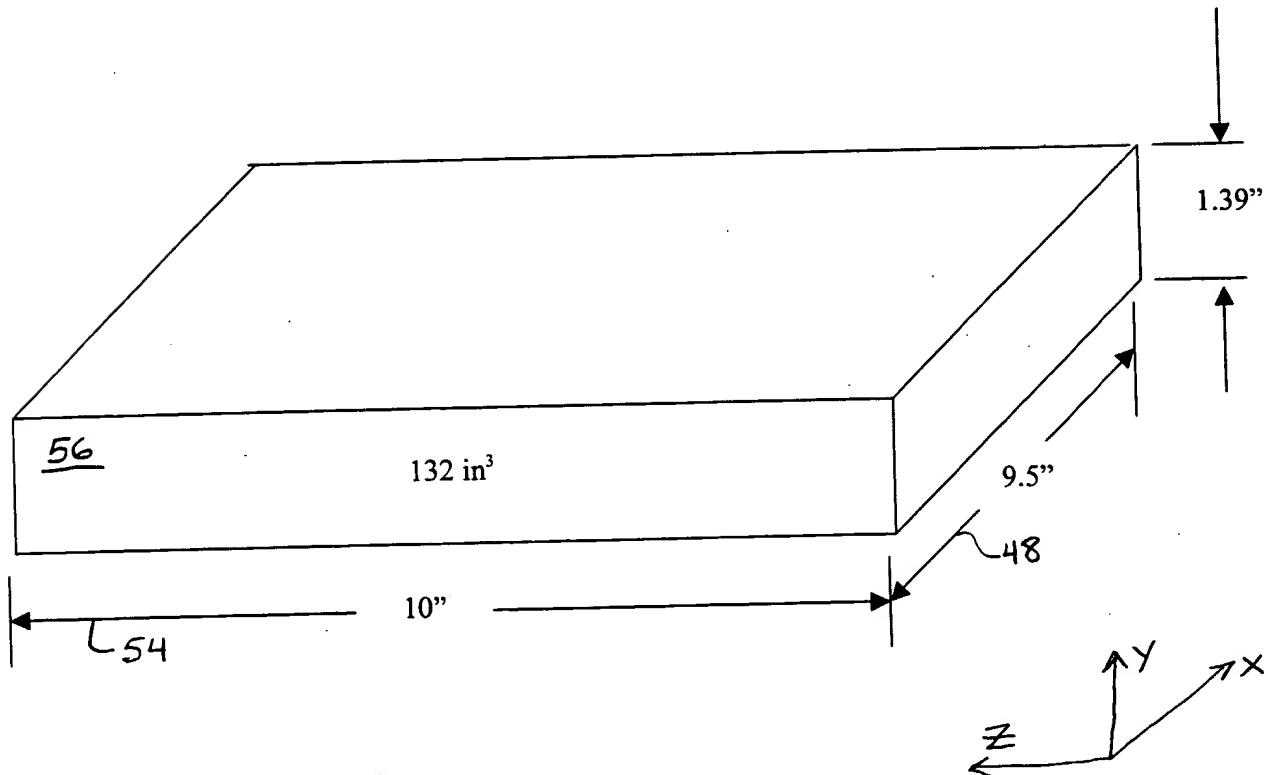
Figure 14

The apparent capture volume created by the capture volumes of Figure 13.
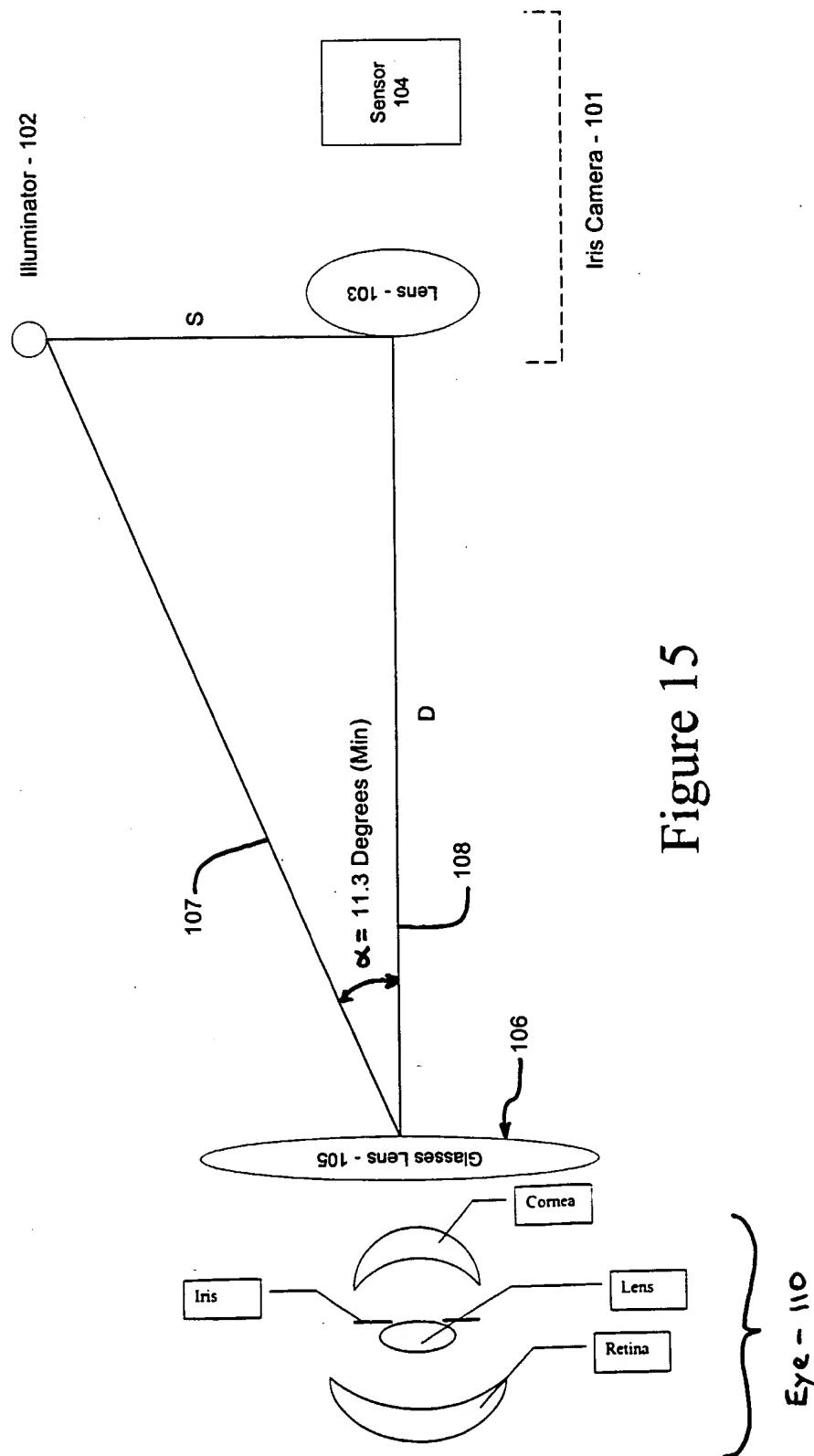
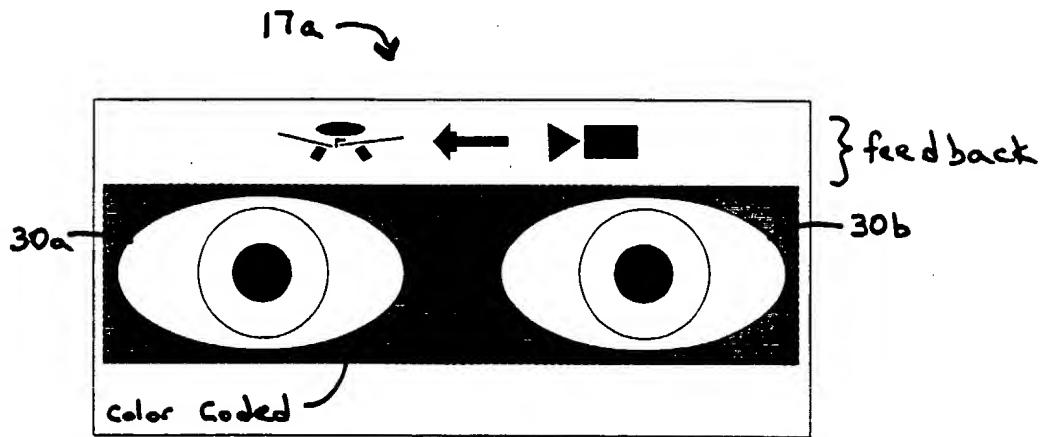Docket N████D-0404
Title: IRI████URE DEVICE HAVING EXPANDED CAPTURE VOLUME
Inventors: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass

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Figure 15

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Inventors: Michael Braithwaite, Kevin C. Kaighn and Randal W. Glass

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17a

30a

30b

} feedback

Color Coded

Figure 16: Partially Silvered Mirror Interface with feedback

Camera(s)

Subject's Eyes

15a

24

Processor

30a

30b

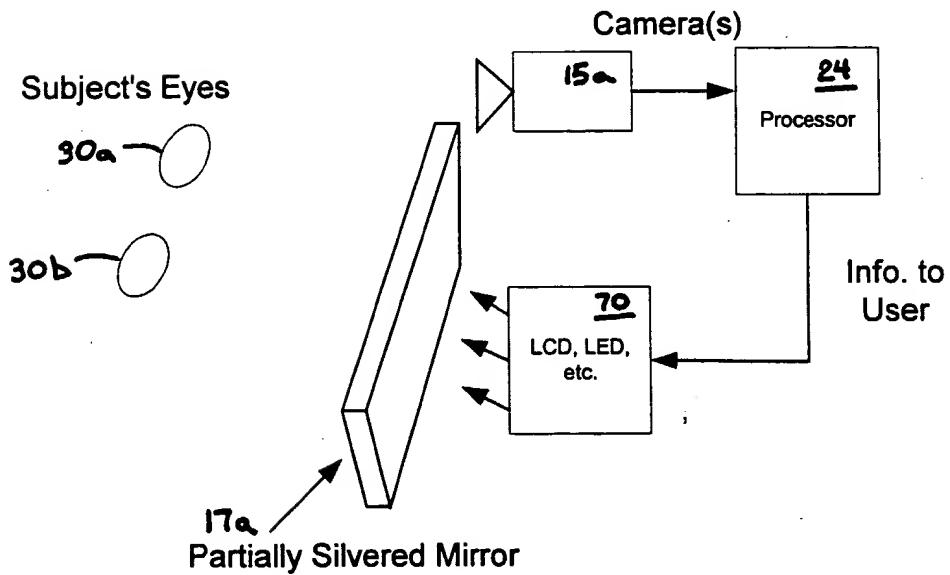Info. to
User

70

LCD, LED,
etc.

17a
Partially Silvered Mirror

Figure 17: Side view of interface showing backlit interface and subject's eyes

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FIGURE 18